

a vertical section of the cill and inner frames, at C D, 8 being the cill, and 9 the casement. 17 is a circular hole, bored through the cill, at the point 14, for the escape of any water that may get into the space 15. 16 is a groove, or inverted gutter, for carrying off the water.

The exact forms of all these sections must be particularly attended to in execution.

When it is desired to close the window, the two halves are pushed together, and the convex surface of 6 fits into the hollow in 7. It will be found that these parts will touch before the window is fairly closed, and that, by the exertion of a little force, they are, as it were, slipped or snapped, the one into the other. The handle A is moved from the right to the left, and lifted over and into the hook M, and this hook M being at just such a projection from the frame, as to cause the handle to fit tightly into it, the forcing down of the latter upon the hook at P jams or locks together the two halves. At the same time, the moving of the handle A from right to left will turn the bar, and the books 3 and 4 will enter the holes prepared for them in the head and cill. These hooks, before the handle was turned, would show in a section of the bar and wood, as in figure X.

The window will then be securely closed. It will be observed that, besides the excellent adaptation of all the joints to resist weather, the advantage of this mode of fastening consists in this, viz., that by a single movement, each of the halves is bolted in three places, and indeed firmly secured to the other half throughout the whole height of the window, and that, also by a single movement, both halves are set at liberty; whereas, upon the ordinary principle of folding doors or windows, the left hand half alone is secured at top and bottom, and the right hand one depends for its fastening upon the single bolt or latch which connects it with the other half, and this imperfect fastening of the halves, moreover, requires three separate movements to complete it, or to set it at liberty, the practical consequence of which is, that to avoid trouble, the right hand half alone is opened.

With respect to the extent of movement respectively of the bar B, the handle A, and the hook M, it will be easily understood after due consideration of their respective purposes.

The turning of the bar, being for the sake of the movement it communicates to the hooks 3 and 4, that purpose will be amply answered by a power of turning in a quarter of a circle.

The hinging of the hook M appears to be contrived to give the play necessary to assist the jamming or locking before mentioned. The handle A may of course be placed in the most convenient situation for the hand, depending upon the height of the window from the ground. In windows of a larger size than the one represented in the drawing, a rail or transom runs across each of the halves, at about two-thirds of their height from below, giving the whole the appearance of a cross. Hence, the French word *croisée* for a window.

A prejudice exists with English people against casements, as not being wind and water tight; and it is true, that what are understood by French windows in England, that is, French windows made in the English way, are, generally speaking, as imperfect and unsatisfactory contrivances as can be imagined. But the real French window, as made in France, and made well, is perfectly secure against weather.

Its advantages are great. When open, the whole space made available for the purpose of admitting light is also made so for the admitting of air; whereas, in a sash window, one-half of that space must necessarily be always closed.

The view through it is uninterrupted; whereas, in sash windows of the ordinary size, the main bar, where the sashes join, is about on a level with the eye. The inconvenience of stooping the body to look out of the window is also avoided. From the necessity of this posture, with the sash hanging over the neck, the French call sash windows *fenêtres à la guillotine*, or guillotine windows.

The strength shown on the drawing is, perhaps, hardly sufficient for any but small sized windows, or where tough woods are used.

The drawing comprehends what has been

found to answer well in France, where this kind of window has been used, it may be safely said, for a century at least, universally, and in buildings of a superior class, for upwards of 200 years; for, in that country, leaded lights were disused much earlier than in England. French windows have hitherto failed for the most part in England, merely for want of accurately copying the model which has been proved to succeed in France.

In France almost all windows have wooden blinds fixed outside; and in some situations in England these might be found useful. When combined with the French window they afford the means of admitting an abundance of air, and at the same time excluding the glare and heat of the sun.

F. I. D.

IMPROVEMENT OF BROADWAY, NEW YORK.

FROM the battery almost to Union-square this grand promenade of our transatlantic brethren has of late been renovated and improved in its buildings, its pavements, and its side walks; indeed, its buildings have been or are being so throughout the whole of its length, so that many old land-marks are vitally altered or altogether gone. No. 1—General Washington's house—has been converted into "The Washington" Hotel. On the site of Bunker's mansion and adjoining properties six extensive stores are being erected, five stories high, with brown stone fronts, and iron shutters and floor columns. The brown stone is in general a mere facing of two-inch slabs on brick. Mr. C. S. Warner is the architect. Four new stores are in process of erection on the site of the old City Hotel. Mr. J. French is the architect of the whole of this block between Cedar and Thames-street. The frontage of the stores is 102 feet, depth 142. They are to be five stories in height, and to cost 100,000 dollars. The fronts will also be of brown stone, and the first story ornamented with fluted columns and pilasters, with Corinthian caps and medallion cornice; the windows trimmed with architraves and cornices. Opposite, on the site of the old National Hotel, a 'splendid' silk warehouse is in course of erection. The front is to be in the Elizabethan style, and the material West Chester marble, in blocks 3 feet thick. The lower story will be faced with a series of ornamental columns, standing on strong plinths in front of piers supporting a frieze and cornice. On these will stand other pilasters with intervening pedestals, elliptical arches with ornamented keystones over the windows in each story, the whole to be surmounted with a cornice and elaborately carved open parapet, ornamented with pedestals and urns, resting on corbels and brackets. The central portion of the parapet will be elevated above the rest, and terminated by solid marble balls. The floors will be supported by wrought-iron beams, and each floor will present an unbroken surface of nearly 5,000 feet, the building being 140 feet deep, and 37½ feet front on Broadway. The architect, Mr. Joseph Wells, expects to complete the building by 1st December, at the estimated cost of 40,000 dollars. Various other stores, chiefly faced with brown stone, are at present in progress, and near Chamber-street, 'a very tasty and elegant structure,' according to the local statements, is being formed for the Chemical Banking Company, at a cost of some 15,000 to 20,000 dollars. Messrs. T. Thomas and Son are the architects. The style is called the 'Romanistic,' with an elaborate entrance and heavy truss cornice. The banking room will be 17 feet in height, with a frescoed dome ceiling. Part of the street is being laid with 'Russ pavement,' by Messrs. Russ and Reid, who estimate the cost of laying the whole street with blocks of this species of pavement at 320,000 dollars.

DRAWING ACADEMY.—On the score of long service in the cause, Mr. R. Brown's intimation, through our advertising columns, that he has opened a Drawing Academy in Knightsbridge deserves to be pointed out. He numbers amongst his many pupils of former days some of the leading architects and builders of the metropolis.

THE MOVEABLE TIME-TABLE OF THE EASTERN COUNTIES RAILWAY.

WE have been asked to inquire what, in the name of all that is erratic and unbusiness-like, can lead the directors of the Eastern Counties Railway to perplex poor travellers by they do by altering backwards and forwards the hours of train departures? Our own experience fully justifies the inquiry. A fortnight ago we travelled to the far-distant Shoreditch, in time for the half-past ten train to Hertford, and, getting there twenty-five minutes too soon, as we fancied, found we were nevertheless five minutes too late, the train having started at ten, and so we had to wait till half-past eleven for the next chance. On Saturday last we were compelled to retread the ground, and took care to be there before ten, when lo, and behold! the time was again changed to half-past ten; and for more precious minutes had to be spent in the drafty station-house.

Surely the good-natured and sensible secretary of the company, Mr. Roney, can have no voice in these vexatious vagaries made seemingly for the fun of the thing. To occupy an hour and twenty minutes at oftener an hour and a half in doing twenty miles is bad enough, without throwing one's whole day by such vacillating misarrangements as these.

KENILWORTH-STREET SEWER.

SIR.—In your number of to-day you refer to the extraordinary charge of Dr. Ure, made against me by implication, that I added copper to the sewer water, for the purpose of removing the prussic acid. You seem to think that I should deny this infamous charge, if it be untrue. I have not done so, because I thought that the spirit in which it was made would prevent as person giving the least credence to so monstrous an accusation. But I bow to your opinion, as I should be sorry that a single honest man could believe me guilty of such an act. I therefore state that I have not the remotest knowledge, either directly or indirectly, of such a sophistication, having been made. I further express my disbelief that this act has been perpetrated by any one.

I cannot conclude without expressing my astonishment that any scientific man, even in the tumults of the most uncontrolled temper, could have insulted his profession or the public by a calumny so inconceivable and preposterous.—I am, Sir, &c.,

November 10th.

LYON PLAYFAIR.

. We hope Dr. Playfair does not imagine that our credence is so easily accorded as I would seem to fear. But however unworthy of notice such a charge may be generally held to be, an indignant denial at least renders impossible for a party capable of propagating a false or reckless charge, to maintain any equally wrong use of the fact of its being denied. Dr. Ure, without waiting, may here remark, for any such denial, I issued a fourth report, as to which we do not see any necessity for further notice, unless he be to remark, that the sudden death of the man Grosse, in Long Acre, seen entirely to refute his assertion in it, that "an inhalation of prussic acid vapour mixed with sulphuretted hydrogen alone can cause such an awful catastrophe." But for that, we do not doubt the probability that out of the "hydrazine" than mere sulphuretted phosphoretted, or even cyanuretted hydrogen or prussic acid may occasionally pervade the heterogeneous abomination of sewers. Indeed to any one of all acquainted with the still more recondite, and one might have almost a rare, hydride of selenium, or seleniuretted hydrogen, and its very peculiar odour, or that might fairly have been included, however unaccountably, in the list just particularized. We may here add by the way, that Mr. Cubitt, though no tangible charge was made against him touching the construction of this sewer, has addressed the commissioners in an explanatory letter, regarding which all we need say is, that we think the commissioners should, Mr. C. requests of them, distinctly state if everything which was required of him had been done.